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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/621,615	07/18/2003	Jens Arik Almkermann	PNL 21347	2906
7590	12/30/2005		EXAMINER MILLER, CARL STUART	
Peter N. Lalos Kenneth J. Whittington, Stevens, Davis, Miller & Mosher, LLP 1615 L Street, N.W., Suite 850 Washington, DC 20036-5622			ART UNIT 3747	PAPER NUMBER

DATE MAILED: 12/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

725A

Office Action Summary	Application No. 10/621,615	Applicant(s) ALMKERMANN, JENS ARIK	
	Examiner Carl S. Miller	Art Unit 3747	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10-13 is/are allowed.
- 6) ☒ Claim(s) 1-9 and 14-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-9, 14-15 and 17-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kempfer ('294) in view of Kirwan.

Kempfer applies as per the last office action and Kirwan teaches the use of reformer gases from an onboard fuel cell system to heat exhaust gases during starting and at other times by directly thermally coupling these gases to the exhaust gas flow. Also, Kempfer does not specify the use of a heat exchanger per se, but implies the use of such a device in that the pre-heater disclosed may be generically used to heat many different devices, thereby making a heat exchanger an obvious way to achieve this end.

It would have been obvious to use the heat generated by the reformer gases of Kempfer to thermally heat the exhaust gases of the system as taught by Kirwan because the latter had taught this as a source of converter pre-heating and the former had already taught the desirability of pre-heating the converter to improve engine performance.

Claims 2 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kempfer and Kirwan as applied to claim 1 above, and further in view of Andrews.

Andrews teaches the use of reformer gases from a fuel cell system to pre-heat intake air in order to improve engine performance.

It would have been obvious modify Kempfer as noted above and to use the reformer gases to also heat the intake air as taught by Andrews because Kempfer notes that the component (10) that is pre-heated may be any component that would benefit from pre-heating (and this would have included an air intake manifold).

Claims 10-13 remain allowed.

Applicant's arguments filed 9/14/05 have been fully considered but they are not persuasive.

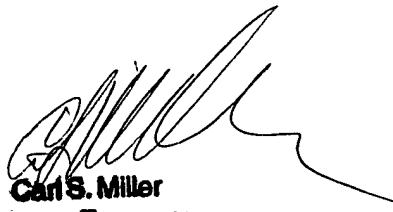
In particular, the examiner has now applied the reference to Kirwan instead of the Lomax reference because the former reference clearly shows the use of reformer gas flow to heat an exhaust gas flow in order to pre-heat a converter in the exhaust line. This is, of course, a direct thermal coupling of the two systems, thereby making applicant's argument that the prior art did not teach this feature a moot point. Furthermore, Andrews has now been applied in order to teach that it was known to use reformer gas heat to heat the intake air flow.

Since the use of new art against the claims was not totally precipitated by applicant's amendments, this action has been made non-final.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carl S. Miller whose telephone number is 703-308-2653. The examiner can normally be reached on MTWTHF.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry YUEN, can be reached at 571-272-4856. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Carl S. Miller
Primary Examiner